Slide 1

SAN ANTONIO
SIGGRAPH
2002
demo scene

Slide 2

SAN ANTONIO
SIGGRAPH
2002

The Demo Scene
- Present state -

Theo Engell-Nielsen
hybris / NEMESIS

demo scene

Slide 3

The Present Scene
How does a scener look like?

A typical scener (completely chosen at random) , aged 16 years

Slide 4

The Present Scene
Who is Theo Engell-Nielsen?

- I knew zero page upcodes on the Commodore 64 by heart before I could say "Hello, my name is Theo" (in *English,* my mother tongue is Danish).
- At age 16 spent about 3 hours each day programming an Amiga 500 in M68000 assembly language.
- Have won three 1st prizes at The Party (among others). *Boasting is important to most sceners :-)*
- PhD studies are on CGI fire and explosions.

Slide 5

The Present Scene
What does it take to be a scener?

- Today demos can be huge, complicated projects at almost any scale.
- The technical bits and pieces are not getting fewer.
- All kinds of contributions in a demo group are needed, mainly *graphics (2D & 3D), music* and *code.*
- As it has always been: It takes a lot of hard work, and then some, to be(come) a recognized scener.

Slide 6

The Present Scene
What are demos used for?

- Demos are still 100% show off!
- Demos are still released at demo parties (formerly known as "*copy* parties").
- The demos compete against each other and the sceners vote for the best productions in each of the categories.
- The winners get all the glory, and that is what it is all about *(and the prize money, of course).*

The Present Scene
What is The Scene today?

- **What it has always been!**
  - Driven by enthusiasts.
  - Full of energy.
  - Very innovative - "you saw it first in …"
  - Constantly evolving.
  - Thrives on technology (and pushes it too!).
  - … but time changes everything anyhow…

The Present Scene
Types of demos today

- **Intros**
  - Size limited to 256 bytes, 4Kb, 16Kb or 64Kb.
  - 4Kb+ usually features sound.
  - Usually features tech-oriented effects
    - faster, bigger, better, more, etc.
  - Should be able to run on a "normal" PC (running Windows or Linux) or an Amiga.

The Present Scene
Types of demos today (2)

- **Demos**
  - Maximum size is from 8MB to 30MB
  - Three general categories
    - Visual orientation *(touchy feely demos)*
    - Funny or story driven *(you see these from time to time)*
    - Tech oriented *(a dying species)*
    - Combinations
 - Should be able to run on "normal" PCs, on Windows or Linux, or Amigas. C64 demos actually have their own category.

The Present Scene
Types of demos today (3)

- **WiLD!demos**
  - A demo that runs on unusual equipment: PDAs, old computers (VIC20, ZX Spectrum), Macs, etc.
  - Video "projects" / Cut scenes
    - Short films - some have a story, others do not.
    - Usually 75% has to be computer generated to avoid "I just got this fancy fire-wired HandyCam" productions.
    - The better ones are actually CAF material.
  - Anything wild really
    - A symphony played by a group of matrix printers…

The Present Scene
WiLD!demo example "*PIXOR*"
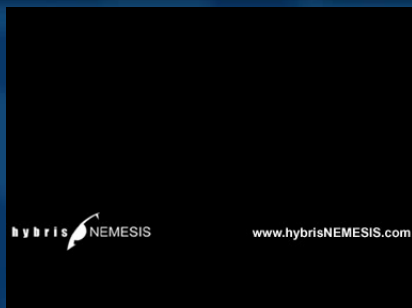
The Present Scene
Other kinds of compos

- **Music**
  - Tracked (C64 or Amiga music).
  - Audio stream (mp3 or ogg format).
- **Graphics**
  - Hand drawn (no scannings or collages are allowed). Usually divided into two categories "C64" and "Others".
  - Traced (raytraced or scanline rendered in a program, usually made with commercially available programs).

The Present Scene
Music and sound
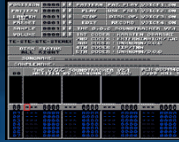
- Was Amiga mod's, 4 channels, 22 KHz.
  - Extended to many stereo sound channels, 44 KHz.
- Today sceners use either mp3 or soft synths.
  - When using streams, the music has no longer limitations compared to other genres of music. Instrumentation, vocals, effects, etc. are the same.
  - Proprietary real-time soft synthesizers are getting popular.
  - Producing demo music today is no longer a simple task.

The Present Scene
Code

- **Lots of free helper libraries make is easier to enter The Scene.**
  - OpenGL, DirectX - high level 3D languages.
  - Most demos run on PCs w/Windows or Linux.
  - C++, assembly language or Java.
  - Specific utilities are very often developed.
  - GCC and MS Dev are the most popular compilers.
- **Demo authoring tools are emerging**
  - Demopaja.
  - Alambik.

The Present Scene
Graphics

- **2D**
  - Drawings
  - Textures
  - Procedural texture generators are getting popular
- **3D**
  - Pixel based (mode 13h, Old School rasterizing)
  - Hardware accelerated
  - Real-time raytracing
  - Hybrids

The Present Scene
But what changed then?

- **Hardware now takes care of the low level stuff that sceners used to code…**
- **The Internet**
  - Made everything much easier
    - Exchanging ideas, tips & tricks
    - *Spreading* the demos
  - Turned The Scene into a global thing
    - Spread out from Northern Europe
    - We still need to see the ketchup effect in the US and Asia

The Present Scene
Examples of demos

Scoopex, "Seven Sins" (1989, Amiga 500, 770 KB)

Farbrausch, "Das Produkt" (2000, PC, 64 KB)

The Present Scene
A subjective conclusion

- **The hardware today is so powerful that the limitations are in our minds.**
- **At a point the two curves "What is it possible to make?" and "What would we like to make" cross each other.**
  - *(But the wrapping became more important than content)*
- **That happened a while back.**
- **That day demos became a form of art.**

The Present Scene
Spin-offs & side effects

- **A lot of people working professionally**
  - Typically in the game industry.
  - Educated "by the scene".
- **A new type of graphical language**
- **New types of music**
  - The 8-bit *genre* has it's commercial break-through now.
  - Underground music - The Commodore 64 Remix scene.

The Future Scene
What is going to happen now?

- **The old computers will be abandoned**
  - Commodore 64 and Amiga demos are thinning out. Demo groups still fight to keep them alive, but the spectators do not have the computers anymore.
- ***"Keep the Scene Spirit Alive!"***
  - Will The Scene die? An everlasting and always discussed topic. 20% think it will do so soon.

The Present Scene
Case study: "South Party"

- **We wanted to tell a funny story**
- **We were fascinated by South Park**
- **SP was made in** *A|W's Poweranimator*
  - **Raytraced**, which takes forever (1 hour per frame).
  - **Hand-animated**, which takes forever.
  - Comedy Central had **50 people** or so working full-time.
- **Two months of spare-time to make our WiLD!demo… So what to do??**

The Present Scene
Case study: "South Party" (2)

- **Had to make our own render-engine.**
  - Written in C++, rendering speed ~ 50 fps (PAL).
- **We wanted to animate via scripts.**
  - Script-interpreter, "*Manuscript*", written in C++.
- **We wanted lip-sync to be good**
  - If you want your characters to be *alive*, this is essential.
 - A ".wav -> .snc"-program was produced, in C++.

The Present Scene
Case study: "South Party" (3)

- **A manuscript was produced (33Kb).**
- **This was split up in scenes and parts**
  - What is essential to tell the story.
  - Funny scenes and details - it must be fun to make demos.
  - The rest - our darlings to kill.
- **Lines were recorded during two days**
  - These were lip-sync'ed in 4 hours using "*SPSync*".
- **Characters were made in Photoshop**
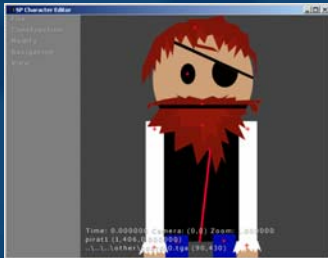 - and put together in our "*SP Character-editor*".

The Present Scene
Case study: "South Party" (4)
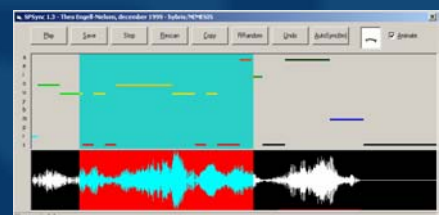
SPSync - easy and very fast to produce usable results
DEMO TIME!

The Present Scene
Case study: "South Party" (5)

"SP Character editor" - hierachy editing of construction paper.

The Present Scene
Case study: "South Party" (6)

- **Manuscript converted to "*Manuscript*"**

```
\#include "..\\graphics\\characters\\pirate1\\pirate1.manus"
\#include "..\\graphics\\characters\\pirate2\\pirate2.manus"
Pirate#1 enters (original script)
            \pirate1 key position (manuscript)
            \pirate1 loop canadian-walk 3:0
            \wait 3:0
            \pirate1 position -457 0 100
            \wait 0:12

Pirate#1 says "I am Long John Silver. Ho ho ho and a bottle of rum!"
            \sound "..\\speaks\\pirate1.wav"
            \pirate1 syncfile "..\\speaks\\pirate1.snc" canadian
            \wait pirat1 sync

Pirate#2 enters. Pirate#1 looks at pirate#2.
            \marker pirate2 ind
            \pirate2 key position
            \pirate2 loop canadian-walk 2:0
            \wait 2:0
            \pirate2 position -142 0 200
```

"Manuscript" - an example

The Present Scene
Case study: "South Party" (7)

- Then the scenes were put through *SPRender* that outputs images and .wav's.
- Put those into *Premiere*, add some sound effects, press CTRL-M and you are done!
- We (a group of five) produced 17 minutes of animation in only 3 weeks *(not including the one month spare time coding…)*
- A tough ride, but it was fun
- We won!

The Present Scene
Case study: "South Party" (8)

A clip from "South Party", WiLD!demo winner at The Party 1999

The Present Scene
Case study: "South Party" (9)

- **A few comments about demo making**
  - The production phase
    - It's fun - in the beginning.
    - It soon becomes boring.
    - After a week you hate it. It becomes tedious.
    - After two weeks you really hate it. Now very tedious.
  - In **hybris**/NEMESIS we produce while being together!
    - Everybody works for free.
    - You *have* to know human factors, or you're doomed!

The Present Scene
Oh - I almost forgot *"Pixor 2"*

Links and references

```
http://www.scene.org/    (all new demos are here first)
http://www.ojuice.net/   (news and scener info)
http://www.pouet.net/    (forums for each demo)
```

Selfpromovation:
```
http://www.hybrisNEMESIS.com/
http://www.PRESSPLAYONTAPE.com/
```

The end of my talk

Thanks for your attention

Psst! Keep the Scene Spirit Alive!